



U.S. Department of the Interior • Bureau of Mines

**MINERAL INDUSTRY SURVEYS**

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**For MINES Faxback call: (412) 892-4088****Gold and Silver Monthly****GOLD AND SILVER IN AUGUST 1993**

Domestic mines produced 26.2 metric tons of gold and 126 metric tons of silver in August, according to the U.S. Bureau of Mines.

U.S. primary silver production in August was essentially unchanged from the previous month and was nearly 6% lower than the production reported for August 1992. U.S. silver imports for consumption for the period January through July decreased 18% from those of the comparable period of 1992. For 1993 through July, the countries shipping the largest quantities of silver to the United States were Canada (604 metric tons), Mexico (597 metric tons), Peru (246 metric tons), and the United Kingdom (243 metric tons). U.S. silver exports for January through July were 12% lower than in the comparable period of 1992. The countries receiving the largest quantities of silver from the United States during the 7-month period were Canada (336 metric tons), the United Kingdom (188 metric tons), and the United Arab Emirates (95 metric tons).

On August 2, following an upward trend in gold prices that had begun in late June, the London daily final price of gold surged to nearly \$406 per troy ounce, its highest level since January 16, 1991, the opening day of the Persian Gulf War, when it was \$403 per ounce. Despite reports of generally low currency inflation, which is bearish for gold, factors reportedly contributing to the increase included growing investor interest in physical gold, buoyed by reports of increased demand, especially in the Far East, and by reportedly heavy speculative buying by commodity funds

plus turmoil in European currency markets at the end of July. Silver and platinum prices generally also benefitted from the same forces affecting gold prices. Some of the gains achieved by these metals during late July and early August were wiped out by heavy investor selling at the end of the first week in August.

**Update:**

On September 1, Consolidated Nevada Goldfields Corp., an affiliate of Australian-based Gwalia Consolidated Ltd., announced that the results of a 3,300-meter (10,800-foot) core drilling program at its Nixon Fork property in Alaska included one 8.9-meter (29-foot) intercept assaying 560 grams per metric ton (16.34 ounces per short ton). According to the company, the intercept cut an entirely new gold-bearing zone at the recently acquired property, located east of McGrath in the west central part of the State. Two other high-grade intercepts, assaying 52 grams per metric ton (1.52 ounces per short ton) and 65 grams per metric ton (1.92 ounces per short ton) reportedly may extend the new zone along the strike of the deposit. Though high-grade intercepts such as the first one above are rarely encountered and may be more indicative of the so called "nugget effect" than of the overall quality of the intercept zone, their discovery is, nevertheless, intriguing and tantalizing to those exploring new ground.

The first two gold bars were poured in September at the new Kanowna Belle Mine near Kalgoorlie in Western Australia. The new open



pit mine is located at the site of the old gold rush town of Kanowna where, between 1890 and 1907, more than 31 metric tons (one million ounces) of gold were produced. Plans call for 2 years of surface mining and gold production of up to 5,300 kg (170,000 ounces) per year followed by underground mining to exploit the deposit's large reserve of gold-bearing sulfide ore. The deposit, reportedly containing a resource of more than 80 metric tons (2.6 million ounces) of gold, was discovered under 40 meters (130 feet) of barren overburden. The Mining Journal reported that the only surface expression detected during exploration was a single geochemical soil anomaly of 67 parts of gold per billion (about 0.0002 ounce per short ton). The deposit had previously been missed because exploration drilling had been too shallow. The mine is owned by equal partners Delta Gold N.L. and Peko Gold Ltd.

In September, Battle Mountain Gold Co. (BMG) announced that the joint venture partners in the Lihir gold development project in Papua New Guinea, together with the Government of Papua New Guinea, had reached agreement in principle to pool their interests to form a single company, the Lihir Gold Co. (LGC), to develop the project. (see also April MIS). The agreement is subject to the approval of various participants and governmental authorities and allows the Government of Papua New Guinea to acquire a 30% interest in the project. The Lihir project is under development on Lihir Island, off the east coast of the island of New Ireland, by partners RTZ Plc. and Niugini Mining Ltd., in which BMG holds a 56.5% interest. Plans call for an estimated 30% to 40% of equity in LGC to be sold in an international offering to help fund development of the project. Construction could begin in 1994. The mine is being developed on the coast and in the crater of an extinct volcano where control of high temperature ground water has been one of the many problems tackled by the development team since the deposit was discovered more than 10 years ago. The Lihir project is forecast to produce about 18.7 Mt (600,000 ounces) of gold per year.

In late September, Toronto-Canada-based Exall Resources Ltd. announced that placer gold mining operations had begun on its Rio Yaqui project on the Yaqui River in the State of Sonora, Mexico. The project, located about 180 km (112 miles) southeast of Hermosillo, the capital of Sonora, is expected to yield 300 to 450 kg

(10,000 to 15,000 ounces) of gold per year. Coarse gold is recovered using simple gravity methods.

The China Daily Business Weekly reported on October 18, that since September 1, when the price paid for gold to Chinese gold producers by the People's Bank of China was allowed to rise to international levels, the amount of gold sold to the central bank was nearly double the amount sold during the previous 8 months. All gold produced in China must be sold to the central bank. About one-third of the nation's 600 gold producers reportedly lost money last year as a result of the low fixed state purchase price. To encourage greater gold production, the Chinese Government reportedly has initiated other reforms, including cancellation of a variety of subsidies and exemptions and adoption of special incentives designed to help the Chinese gold industry make a smooth transition to a market economy. The same source reported that data long considered to be state secrets, such as gold production and reserve data, as well as individual mine performance may soon be revealed to the public.

According to Mining Journal, commercial mining was begun at the Island Block placer mine in New Zealand. The mine's owners, Perilya Mines N.L., Marching Mining (Central) Ltd., and private investors plan to deplete the mine's known resources over a period of 3 years at a rate of about 250 kg (8,000 ounces) per year. The Island Block Mine is located near Miller's Flat in the Otago region of New Zealand's South Island.

#### NOTICE

**Special Publication:** The Branch of Metals has conducted a survey of domestic mineral processing plants using froth flotation as a minerals separation technique. The plants were surveyed for their consumption of reagents used in flotation; operational data on capacities, production, recovery rates, and concentrate grades; and consumption of water, electricity, and grinding media. The results have been compiled in a special issue of Mineral Industry surveys, **Froth Flotation in the United States, 1991**. Copies may be obtained from the Publications Distribution office in Pittsburgh, PA, at telephone number (412) 892-4338.



TABLE 1  
MINE PRODUCTION OF RECOVERABLE GOLD IN THE UNITED STATES

(Kilograms)

State	1992 1/	1992p/						1993
		August	September	October	November	December	January-December	
Arizona -----	6,656	503	507	529	526	521	6,193	441
California -----	33,335	2,588	2,685	2,598	2,553	2,559	31,300	2,638
Idaho -----	3,177	275	294	280	290	305	3,219	298
Montana -----	13,994	1,277	1,302	1,129	1,121	1,160	14,697	914
Nevada -----	203,165	15,207	15,906	15,244	16,147	14,591	181,898	14,736
Other States2/ --	68,796	5,370	5,168	4,590	4,418	4,787	58,688	4,702
Total3/ ----	329,124	25,217	25,863	24,369	25,052	23,923	295,995	23,730

State	1993							
		February	March	April	May	June	July	August
Arizona -----	424	441	430	157	142	131	131	2,297
California -----	2,534	2,590	2,598	2,654	2,488	2,605	2,741	20,848
Idaho -----	285	296	280	276	357	349	298	2,439
Montana -----	841	1,141	1,334	1,324	1,249	r/1,189	1,090	9,082
Nevada -----	15,464	16,175	16,017	16,030	16,138	r/16,131	16,235	126,926
Other States2/ --	4,749	5,359	5,681	5,800	6,109	r/6,170	5,718	44,288
Total3/ ----	24,296	26,000	26,339	26,241	26,485	r/26,573	26,210	205,879

p/Preliminary. r/Revised.

1/Includes annual reporters.

2/Includes Alaska, Colorado, New Mexico, South Carolina, South Dakota, Utah, and Washington.

3/Data may not add to totals shown because of independent rounding.

## U. S. mine production of gold by month

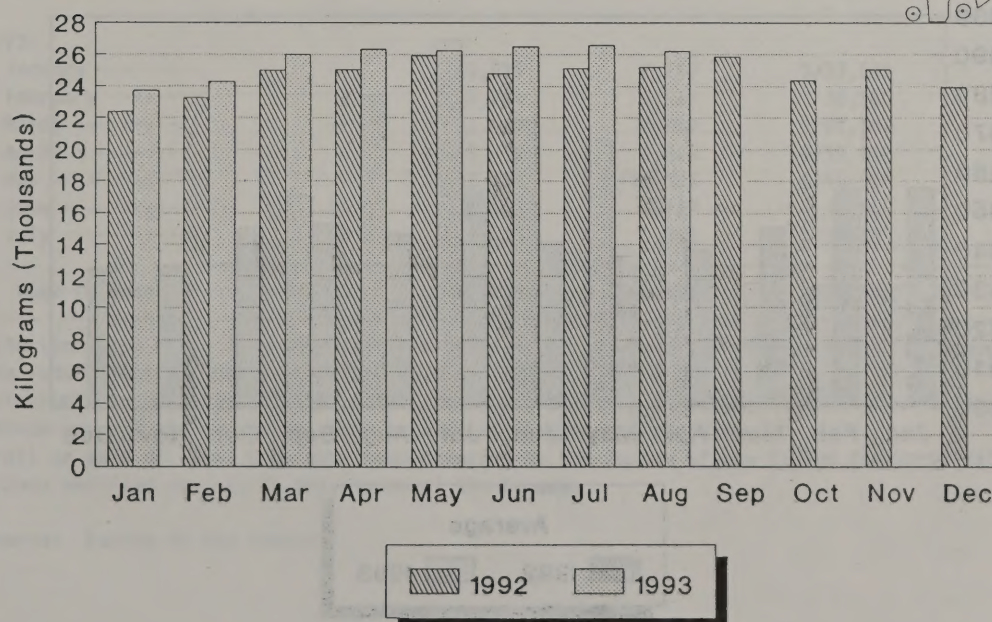




TABLE 2  
SELECTED PRICES, GOLD BULLION

(Dollars per troy ounce)

	Engelhard Industries			Handy and Harman	London final
	Low/date	High/date	Average	Average	Average
1992:					
August -----	336.92/14	355.30/03	344.16	342.96	343.06
September ----	341.23/11	350.94/25	346.78	345.55	345.43
October -----	339.42/28	351.75/08	345.62	344.38	344.38
November -----	331.56/10	340.73/02	336.30	335.08	335.02
December -----	333.00/31	339.88/17	335.78	334.66	334.80
Year -----	331.56 (Nov. 10)	360.86 (July 28)	344.97	343.74	343.73
1993:					
January -----	328.76/13	332.11/26	330.22	329.01	329.01
February -----	328.81/26	333.21/11	330.56	329.35	329.31
March -----	327.30/10	339.02/31	331.29	330.07	330.08
April -----	337.51/01	356.85/29	343.19	341.91	342.15
May -----	355.50/05	383.20/19	367.93	366.72	367.18
June -----	364.27/14	379.74/30	373.17	371.89	371.89
July -----	380.29/01	403.08/30	393.73	392.41	392.19
August -----	368.87/13	406.94/02	379.72	378.46	378.84
September ----	344.93/14	370.53/02	356.10	354.85	355.28
Year to date	327.30 (Mar. 10)	406.94 (Aug. 2)	356.21	354.96	355.10

Source: Metals Week.

## Selected prices, gold bullion Engelhard Industries

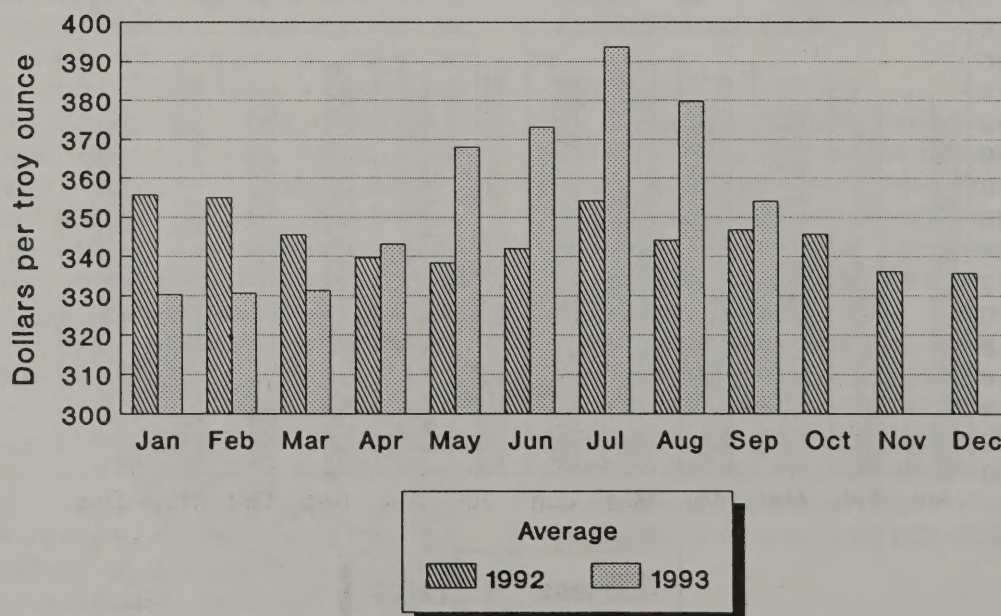




TABLE 3  
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF GOLD BY MONTH1/

(Kilograms)

Period	Ores and concentrates2/	Waste and scrap	Dore and precipitates	Refined bullion	Total3/
Imports					
1992:					
July -----	8	1,330	1,111	8,366	10,815
August -----	76	431	1,198	9,147	10,852
September -----	4	699	1,635	8,819	11,157
October -----	43	1,023	2,591	11,308	14,965
November -----	21	949	834	10,662	12,466
December -----	98	1,136	1,207	8,445	10,885
Year -----	350	15,649	17,092	141,251	174,340
1993:					
January -----	71	2,725	391	3,753	6,939
February -----	82	2,157	702	4,859	11,533
March -----	60	3,211	867	4,11,209	15,347
April -----	89	1,498	1,334	10,297	13,219
May -----	53	880	955	4,28,941	30,829
June -----	6	1,628	1,625	4,13,834	17,092
July -----	4/225	1,491	1,136	7,963	10,816
Year to date3/ -	586	13,590	7,010	84,588	105,776
Exports					
1992:					
July -----	6	9,673	3,530	20,368	33,577
August -----	13	5,935	5,391	11,222	22,561
September -----	1	4,820	3,737	9,192	17,750
October -----	2	4,434	4,481	46,148	55,065
November -----	--	3,043	5,354	33,565	41,962
December -----	3	4,079	3,695	39,372	47,149
Year -----	30	60,968	51,008	256,846	368,850
1993:					
January -----	--	3,013	7,168	5/57,501	67,683
February -----	2	3,744	4,421	16,560	24,723
March -----	--	4,069	7,762	5/47,502	59,333
April -----	4	3,018	5,846	5/55,820	64,688
May -----	--	3,139	5/15,333	5/54,590	73,062
June -----	24	5,648	4,127	18,146	27,945
July -----	23	6,425	3,842	4/39,385	49,675
Year to date3/ -	53	29,056	48,499	289,504	367,109

1/Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

2/Includes gold content of base metal ores, concentrates, and matte imported for refining.

3/Data may not add to totals shown because of independent rounding.

4/All or part of these data have been referred to the Bureau of the Census for verification.

5/Data verified correct by the Bureau of the Census.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF GOLD BY COUNTRY,  
IN JULY 1993 1/

(Kilograms)

Country	Ores and concentrates <sup>2/</sup>	Waste and scrap	Dore and precipitates	Refined bullion	Total <sup>3/</sup>
Imports					
Bolivia -----	--	52	--	259	311
Canada -----	--	117	1,051	3,654	4,821
Chile -----	--	--	42	250	292
Dominican Republic --	--	430	--	--	430
Ecuador -----	--	--	--	335	335
Guyana -----	--	179	--	33	212
Indonesia -----	4/145	--	--	--	145
Mexico -----	80	576	23	--	679
Peru -----	--	--	--	202	202
South Africa, Republic of -----	--	1	--	3,082	3,083
Other -----	--	136	20	150	306
Total <sup>3/</sup> -----	225	1,491	1,136	7,963	10,816
Exports					
Belgium -----	20	204	--	--	223
Canada -----	3	4,823	1,387	629	6,841
China -----	--	--	--	312	312
France -----	--	--	382	1,194	1,575
Mexico -----	--	--	304	311	615
Switzerland -----	--	80	1,367	4/31,583	33,030
United Kingdom -----	--	1,104	351	5,168	6,623
Other -----	(5/)	215	52	189	456
Total <sup>3/</sup> -----	23	6,425	3,842	39,385	49,675

1/Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

2/Includes gold content of base metal ores, concentrates, and matte imported for refining.

3/Data may not add to totals shown because of independent rounding.

4/All or part of these data have been referred to the Bureau of the Census for verification.

5/Less than 1/2 unit.

Source: Bureau of the Census.



TABLE 5  
MINE PRODUCTION OF RECOVERABLE SILVER IN THE UNITED STATES

(Metric tons)

1992 1/		1992p/						1993
State		August	September	October	November	December	January-December	January
Arizona -----	165	15	15	12	15	16	153	13
California -----	18	1	1	1	1	1	15	1
Colorado -----	12	1	1	1	1	1	13	1
Idaho -----	254	16	14	17	15	17	255	17
Missouri -----	32	2	2	3	2	2	25	2
Montana -----	197	16	14	16	14	17	195	14
Nevada -----	614	39	41	45	45	56	586	82
Other States2/ --	511	44	42	42	34	42	498	40
Total3/ ----	1,804	134	131	138	128	153	1,740	170
1993								
	February	March	April	May	June	July	August	January-August3/
Arizona -----	11	14	13	12	12	13	13	101
California -----	1	1	2	1	1	2	2	11
Colorado -----	1	1	1	1	1	1	1	8
Idaho -----	17	16	17	16	18	14	17	132
Missouri -----	2	2	2	2	1	1	2	14
Montana -----	14	15	8	16	8	9	8	92
Nevada -----	70	81	55	54	70	61	62	535
Other States2/ --	38	47	30	26	27	24	22	254
Total3/ ----	154	175	129	128	139	125	126	1,147

p/Preliminary.

1/Includes annual reporters.

2/Includes Alaska, Michigan, New Mexico, New York, South Carolina, South Dakota, Utah, and Washington.

3/Data may not add to totals shown because of independent rounding.

## U. S. mine production of silver by month

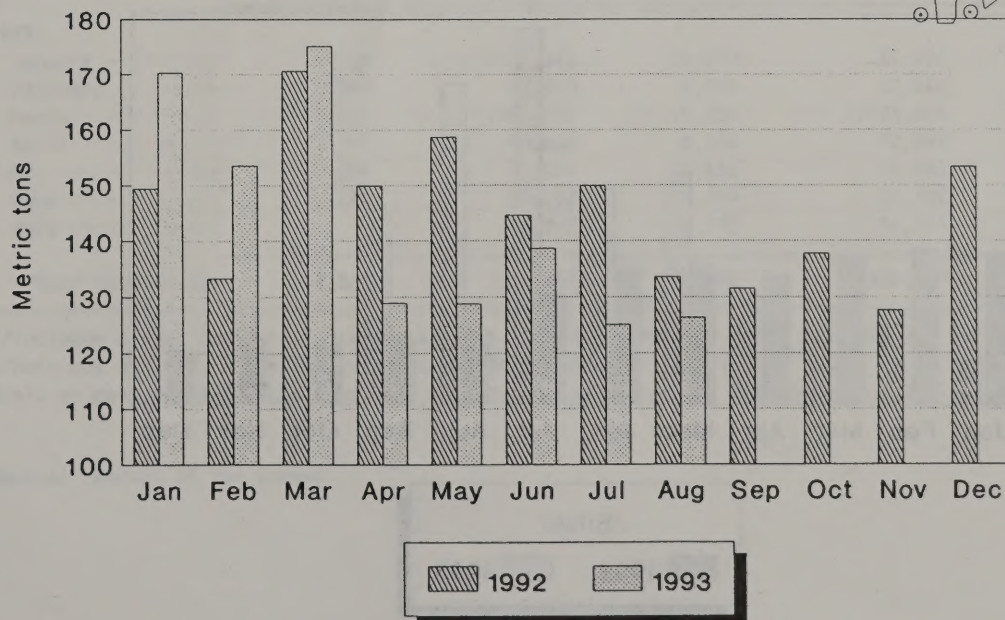




TABLE 6  
SILVER: SELECTED PRICES

(Dollars per troy ounce)

	Handy & Harman, New York			London Spot		
	Low/date	High/date	Average	Low/date	High/date	Average
1992:						
July -----	3.88/07	4.05/02,06	3.95	3.91/08	4.07/02	3.97
August -----	3.64/26	3.96/10	3.80	3.65/26	3.98/10	3.82
September -----	3.68/11	3.86/18	3.76	3.69/11	3.84/16	3.77
October -----	3.69/13	3.79/05	3.74	3.70/14	3.81/21	3.74
November -----	3.64/10	3.93/05	3.76	3.69/11	3.91/06	3.77
December -----	3.68/09,22	3.76/18	3.71	3.69/23	3.76/18	3.73
Year -----	3.64 (Aug. 26, Nov. 10)	4.32 (Jan. 16)	3.94	3.65 (Aug. 26)	4.33 (Jan. 17)	3.95
1993:						
January -----	3.64/04	3.72/12	3.68	3.65/05	3.70/26	3.68
February -----	3.54/25	3.72/11	3.64	3.57/26	3.77/11	3.66
March -----	3.55/08	3.72/26	3.65	3.56/09	3.72/26	3.65
April -----	3.79/07	4.34/30	3.96	3.79/07	4.36/29	3.97
May -----	4.27/04	4.66/28	4.45	4.25/05	4.74/19	4.46
June -----	4.19/14	4.59/01	4.38	4.22/14	4.62/01	4.37
July -----	4.95/14	5.37/30	5.04	4.86/05	5.30/30	5.02
August -----	4.60/06	5.35/02,03	4.81	4.59/13	5.42/02	4.84
September -----	3.99/13	4.81/01	4.17	3.92/14	4.83/01	4.22
Year to date -	3.54 (Feb. 25)	5.37 (Jul 30)	4.20	3.56 (Mar. 09)	5.42 (Aug 02)	4.21

Source: Metals Week.

## Handy and Harman Average Price

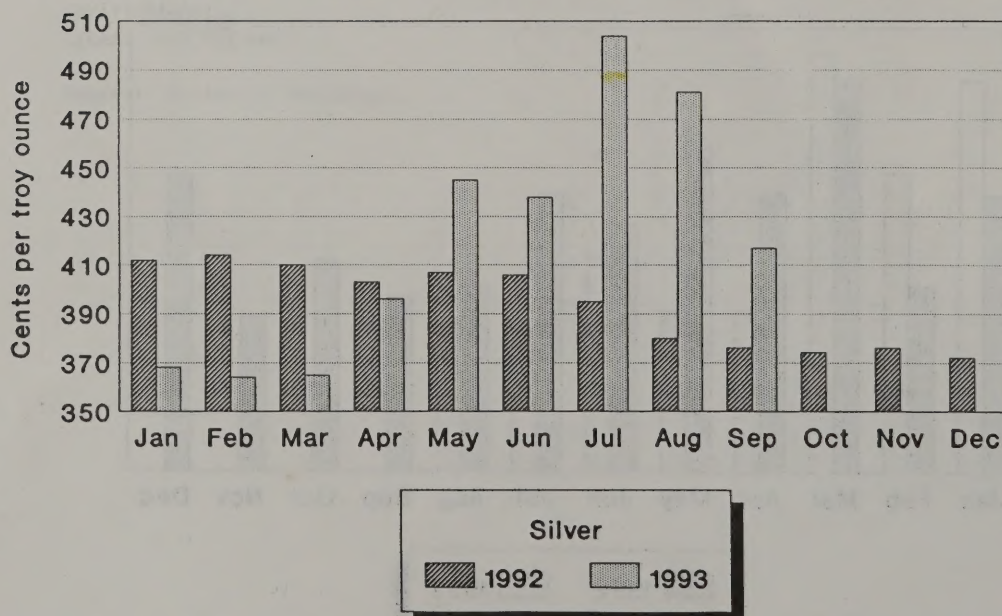




TABLE 7  
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF SILVER BY MONTH

(Kilograms)

Period	Ore and concentrates <sup>1/</sup>	Waste and scrap	Dore and precipitates	Refined bullion	Total <sup>2/</sup>
Imports					
1992:					
July -----	2,058	203,030	43,404	216,048	464,539
August -----	3/6,788	3/191,784	67,232	3/216,026	481,830
September -----	1,930	86,021	26,834	192,397	307,183
October -----	618	3/213,040	41,205	3/255,339	510,201
November -----	750	146,319	30,942	203,270	381,280
December -----	1,024	261,624	36,342	210,665	509,656
Year -----	3/25,352	3/1,774,085	528,715	3/2,661,622	3/4,989,774
1993:					
January -----	455	3/140,042	19,290	187,475	347,263
February -----	--	65,136	44,343	3/250,527	360,006
March -----	1,355	66,372	34,151	3/197,609	299,487
April -----	1,109	102,869	23,852	3/226,694	354,523
May -----	2,048	133,018	32,895	185,142	353,103
June -----	1,264	107,998	28,779	127,276	265,317
July -----	1,048	136,331	20,098	165,642	323,119
Year to date 2/-	7,280	751,766	203,408	1,340,365	2,302,819
Exports					
1992:					
July -----	93	80,875	586	66,965	148,519
August -----	--	59,830	3,283	45,113	108,226
September -----	38	58,244	7,765	40,005	106,051
October -----	2,399	3/76,495	8,948	63,452	151,294
November -----	872	53,865	4,944	79,444	139,125
December -----	476	76,009	4,734	26,843	108,062
Year -----	8,505	3/745,221	88,894	910,587	3/1,753,207
1993:					
January -----	28	3/91,316	15,910	39,976	147,230
February -----	993	65,998	8,930	39,046	114,968
March -----	283	3/101,031	15,234	3/123,094	239,642
April -----	83	42,088	8,564	72,897	123,631
May -----	209	77,934	12,486	75,182	165,812
June -----	278	69,702	8,879	36,303	115,163
July -----	--	68,597	9,596	16,045	94,237
Year to date 2/-	1,874	516,666	79,598	402,544	1,000,682

1/Includes silver content of base metal ores, concentrates, and matte imported for refining.

2/Data may not add to totals shown because of independent rounding.

3/All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.



TABLE 8  
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF SILVER BY COUNTRY  
IN JULY 1993 1/

(Kilograms)

Country	Ores and concentrates2/	Waste and scrap	Dore and precipitates	Refined bullion	Total3/
Imports					
Canada -----	742	8,187	--	70,375	79,304
Chile -----	--	373	15,378	40	15,792
Estonia -----	--	4,987	--	--	4,987
Indonesia -----	303	--	--	--	303
Malaysia -----	--	17,949	--	--	17,949
Mexico -----	4	33	4,720	68,374	73,131
Netherlands -----	--	27,084	--	--	27,084
Peru -----	--	386	--	26,852	27,238
Russia -----	--	7,316	--	--	7,316
United Kingdom -----	--	69,823	--	--	69,823
Other -----	--	193	--	--	193
Total3/ -----	1,048	136,331	20,098	165,642	323,119
Exports					
Belgium -----	--	8,096	--	--	8,096
Canada -----	--	42,797	--	--	42,797
France -----	--	--	9,111	--	9,111
Hong Kong -----	--	353	--	--	353
Japan -----	--	795	--	--	795
Jordan -----	--	--	--	389	389
Korea, Republic of -----	--	248	--	532	779
Netherlands -----	--	1,529	--	--	1,529
Singapore -----	--	25	--	15,073	15,098
Sweden -----	--	2,546	--	--	2,546
Switzerland -----	--	5,338	199	--	5,537
United Kingdom -----	--	6,007	286	--	6,293
Other -----	--	861	--	51	911
Total3/ -----	--	68,597	9,596	16,045	94,237

1/Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary silver excluded.

2/Includes silver content of base metal ores, concentrates, and matte imported for refining.

3/Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census.

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